

[54] **METHOD AND APPARATUS FOR FORMING A COMPOUND LIQUID JET PARTICULARLY SUITED FOR INK-JET PRINTING**

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[57]

ABSTRACT

Method and apparatus for providing a compound liquid jet of fine droplets, particularly suitable for ink-jet recording systems. A primary stream is formed by ejecting under pressure a primary liquid from a nozzle and then causing the primary stream to traverse a thin layer of a secondary fluid to form a compound liquid stream which breaks up to form a compound jet of fine droplets each containing both the primary liquid and the secondary fluid. Since only the primary liquid passes through the nozzle, it may be chosen to minimize, or even eliminate, nozzle clogging and other difficulties associated with the use of most inks in ink-jet systems. The secondary fluid may contain fine particulate material, e.g., pigments, and it is used to contribute color or other physical properties to the compound jet.

76 Claims, 17 Drawing Figures

